

### **REMARKS/ARGUMENTS**

This Preliminary Amendment replaces Applicants' response (dated July 17, 2006) to the Final Office Action dated April 17, 2006, which response was not entered, and this submission further responds to the Advisory Action dated July 24, 2006. Claims 1-5, 8-22, 24, and 26-60, as amended, as well as new claims 61-78, are currently pending in the application for the Examiner's review and consideration.

Applicant has amended independent claims 1, 17, and 46 to more narrowly recite the surprising and unexpected results of the present invention as discussed in more detail below. Support for such narrowing amendment can be found in the originally-filed specification, at least at paragraph [0101] and in the examples (*e.g.*, Examples 7, 11, 14, 15, 19, and 20). Contrary to the Examiner's assertion in the most recent Advisory Action, Applicant did not "pick and chose" upper and lower limits without discretion. Indeed, Applicant has amended these claims to present the broadest range supported in the specification. Applicant has also amended the other claims as shown to correct matters of form only. No new matter has been added by the amended claims or new claims, and thus entry of the foregoing amendments and reconsideration of the claims is respectfully requested.

Claims 1-5, 8-22, 24, and 26-60 were rejected under 35 U.S.C. § 103(a) as being obvious over Whaley (US Patent No. 6,359,072; hereafter "Whaley"). Applicant respectfully traverses the rejection for the following reasons.

The films of the present invention are surprising and unexpected. *See, e.g.*, Examples 7, 15, and 19-20. These films exhibited a surprising balance of desirable optical, physical, and mechanical properties. More significantly, the mechanical properties of the claimed films are significantly improved due to the melt index and melt index ratio ( $I_{21.6}/I_{2.16}$ ) of the individual components. As such, it has been discovered that the melt index ( $MI_{2.16}$ ) and melt index ratio ( $I_{21.6}/I_{2.16}$ ) are result-determinative (*i.e.*, critical) values to obtain a desirable balance of optical, physical, and mechanical properties.

At best, in view of Whaley, one skilled in the art might find it obvious to try various combinations of CDBI, densities, melt indexes, melt index ratios, and  $M_w/M_n$  ratios. However, this is not the standard of 35 U.S.C. § 103. *In re Geiger*, 2 USPQ2d 1276 (Fed. Cir. 1987) *citing*

*In re Goodwin*, 576 F.2d 375, 377, 198 USPQ 1, 3 (CCPA 1978); *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); *In re Tomlinson*, 363 F.2d 928, 150 USPQ 623 (CCPA 1966). An invention is merely “obvious to try” if the prior art gives either no indication of which parameters are critical or no direction as to which of many possible choices is likely to be successful. *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 10 USPQ2d 1843 (Fed. Cir. 1989). Whaley discloses a vast range of MIs (0.1 dg/min to 1,000 dg/min) and densities. See Whaley at col. 5, ll. 41-55. Nowhere does Whaley teach or suggest which parameters are critical. Whaley also does not teach or suggest which of the many possible choices are likely to be successful. Furthermore, Whaley discloses melt index ratios of less than 30, not 30 to 80 as required in every claim. *Id.* at Table 1.

Therefore, Whaley does not teach, show or suggest a film comprising a polyethylene copolymer having the unique combination of a CDBI of at least 70%, a melt index  $I_{2.16}$  of from 0.1 to 15 g/10 min., a density of from 0.910 to 0.940 g/cm<sup>3</sup>, a melt index ratio  $I_{21.6}/I_{2.16}$  of from 30 to 80, and an  $M_w/M_n$  ratio of from 2.5 to 5.5; and a low density polyethylene (LDPE) having a melt index  $I_{2.16}$  of from 0.05 to 10 g/10 min and a density of from 0.920 to 0.940 g/cm<sup>3</sup>, as recited in every claim. Such unique combination of physical properties produces a shrink film having a surprising and unexpected balance of optical, physical, and mechanical properties. Accordingly, withdrawal of the rejection is respectfully requested.

As stated in the specification, “It has been difficult to obtain films combining good optical properties, such as clarity, haze and gloss, good shrink properties, and sufficient holding force, as well as good mechanical properties, such as puncture resistance and tear strength.” See, e.g., Applicant's specification at paragraph [0006]. According to the present invention, it appears the MI and MIR (melt index ratio) of the respective components is a result-determinative value for shrink films having a desirable balance of optical, mechanical, and physical properties. Such a result-determinative value has not been taught, shown, or suggested by the prior art of record.

The desirable balance of optical, physical, and mechanical properties of the resulting films according to the claimed invention, as shown by Examples 7, 15, and 19-20, is surprising and unexpected. Such results are not dependent on the thickness of the studied films, contrary to the Examiner's assertion. Indeed, the unexpected mechanical properties of the films, discussed in more detail below and previously presented, are also not due to the varying thicknesses of the

exemplary films. The relevant mechanical properties are normalized to the film thickness and reported in units of "per thickness." See, e.g., the instant specification at paragraph [0137]. Therefore, it is believed that manipulating the thickness of the films would not obtain a different result.

Table 1 is taken from Tables 7, 8, and 10 of the specification and reports certain mechanical properties of the resulting films 7, 15, and 19- 20 that are normalized to film thickness.

**TABLE 1**

	Ex. 7	Ex. 15	Ex. 19	Ex. 20
Composition (wt %):				
Component B:	25% LDPE-A	25% LDPE-C	20% LDPE-D	20% LDPE-D
Component A:	75% Resin A	75% Resin A	80% Resin B	80% Resin C
B: Melt Index $I_{2.16}$ (g/10min)	0.3	1.0	0.75	0.75
B: Density (g/cm <sup>3</sup> )	0.922	0.920	0.923	0.923
A: Melt Index $I_{2.16}$ (g/10min)	1.0	1.0	0.9	0.5
A: Density (g/cm <sup>3</sup> )	0.920	0.920	0.925	0.925
Dart Drop Impact, Method A, Face (g/μm)			3.48	6.61
Puncture Resistance Damaging Energy (mJ/μm)	194	137	157	183
Puncture Resistance Damaging Force (N/μm)	2.38	2.02	2.19	2.56
Plastic Force, MD (cN/15mm)	2	0.8		
Thermal Force, MD (N/15mm)	2.92	1.48	1.35	1.37
Thermal Force, TD (N/15mm)	3.38	1.40	1.19	1.20

Considering Examples 7 and 15 in more detail, Example 7 is a film produced from 75% Resin A and 25% LDPE-C, and Example 15 is 75% Resin A and 25% LDPE-A. The differences between LDPE-C and LDPE-A are reported in Table 5 of the specification. There it is shown that the densities of LDPE-C and LDPE-A are similar (0.920 g/cm<sup>3</sup> and 0.922 g/cm<sup>3</sup>, respectively). However, the melt indexes (MI<sub>2.16</sub>) of LDPE-C and LDPE-A are vastly different (1.0 g/10 min and 0.3 g/10 min, respectively). Such differences in MI produced films having similar, desirable optical and physical properties but significantly different mechanical properties, e.g., puncture resistance damaging energy (194 mJ/μm vs. 137 mJ/μm – more than 40% difference), machine direction plastic force (2 cN/15mm vs. 0.8 cN/15mm – about 150% difference), and machine direction thermal force (2.92 N/15mm vs. 1.48 N/15mm – about 97%

difference). Such results are normalized to thickness of the films, and are significant and surprising.

Considering Examples 19 and 20 in more detail, Example 19 is a film produced from 80% Resin B and 20% LDPE-D, and Example 20 is 80% Resin C and 20% LDPE-D. Here, the LDPE component is the same, but the polyethylene resin is varied. The densities of Resin B and Resin C are identical,  $0.925 \text{ g/cm}^3$ . However, the melt indexes ( $MI_{2.16}$ ) of Resins B and C are vastly different, 0.9 and 0.5 g/10 min. Such differences in MI produced films having similar optical properties but significantly different mechanical properties for puncture resistance damaging energy ( $157 \text{ mJ}/\mu\text{m}$  vs.  $183 \text{ mJ}/\mu\text{m}$  – about 17% difference) and Dart Drop Impact at Face ( $3.48 \text{ g}/\mu\text{m}$  vs.  $6.61 \text{ g}/\mu\text{m}$  – about 90% difference). Again, those results are normalized to the thickness of the films, and are significant and surprising.

One of ordinary skill in the art, including the Examiner, would have thought such mechanical properties would be similar, if not identical, because the components of the blends are similar, if not identical. That has proven not to be the case. LDPEs and polyethylene copolymers having “similar physical properties” have been proven to provide films having significantly different mechanical properties, yet maintain the desirable balance of optical and physical properties. Such results are nothing short of surprising and unexpected.

In view of the above, comparisons within “the lines of scientific procedures” have been provided. The films of the present invention exhibit significant and unexpected mechanical properties and more significantly, exhibit a balance between desirable optical, physical, and mechanical properties not previously available or suggested. Whaley does not teach, show, or suggest such a unique combination of properties to provide shrink films having desirable optical, physical, and mechanical properties. Therefore, the claimed invention is not obvious in view of Whaley. Withdrawal of the rejection and allowance of the claims is respectfully requested.

Claims 1-5, 8-22, 24, and 26-60 stand rejected under 35 U.S.C. § 103(a) as obvious over Yap *et al.* (US Patent No. 6,482,532; hereafter “Yap”). Applicant respectfully traverses the rejection, as the arguments presented above with respect to Whaley, namely regarding the surprising and unexpected results, are equally applicable to Yap. Withdrawal of the rejection and allowance of the claims is respectfully requested.

### ADVISORY ACTION

Applicant respectfully disagrees with the statements in the Advisory Action in that, as mentioned above, an invention is merely "obvious to try" if the prior art gives either no indication of which parameters are critical or no direction as to which of many possible choices is likely to be successful. *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 10 USPQ2d 1843 (Fed. Cir. 1989). Obviousness is tested by what combined teachings of prior art references would have suggested to those of ordinary skill in art, not by whether particular combination of elements from such references might have been "obvious to try." *In re Fine*, USPQ2d 1596 (Fed. Cir. 1988). Nowhere do Whaley or Yap teach or suggest which parameters are critical. Whaley and Yap also do not teach or suggest which of the many possible choices are likely to be successful. Accordingly, withdrawal of the rejections and allowance of the claims is respectfully requested.

Regarding the Applicant's proposed amendments after Final, which were not entered by the Examiner, the Examiner stated that "Applicants have applied a standard of scope to Whaley et al that is required in the instant claims as to picking and choosing of the melt indices and density values for the LDPE as shown in paragraph [0101] of the Specification wherein the lower limit may be picked without regard to the picking of the upper limit values." Applicant disagrees. Paragraph [0101] reads as follows:

In embodiments including an LDPE resin, the LDPE can be any conventional LDPE; *i.e.*, a polyethylene homopolymer or copolymer having a density of from 0.912 to 0.940 g/cm<sup>3</sup>. Such LDPEs are well-known and are commercially available from a variety of sources including, for example, ExxonMobil Chemical Co.'s LD line of resins. Such resins are typically produced in high-pressure, free-radical initiated processes. Preferred LDPE resins have a density of from a lower limit of 0.912 or 0.916 or 0.918 or 0.920 g/cm<sup>3</sup> to an upper limit of 0.940 or 0.935 or 0.930 or 0.928 g/cm<sup>3</sup>. Preferred LDPE resins have a melt index I<sub>2.16</sub> of from a lower limit of 0.05 or 0.1 or 0.2 g/10 min. to an upper limit of 10 or 5 or 2 or 1.5 or 1 g/10 min. Ranges from any lower limit to any upper limit are contemplated.

As shown, both upper and lower limits are provided, and "[r]anges from any lower limit to any upper limit are contemplated." Applicant has every right to claim the upper and lower

limits from the specification. Furthermore, the range chosen by the Applicant corresponds to the surprising and unexpected results discussed above and is the broadest range supported by paragraph [0101]. For reasons discussed above, the claimed invention is not shown or suggest by Whaley and Yap, either alone or in combination.

Furthermore, Applicant is not aware of a “picking and choosing” standard under 35 USC § 103. The Examiner is kindly requested to provide support from within the MPEP to substantiate this argument.

Finally, Applicant is not clear why the Examiner states “the rejection was made under 35 USC 103 and not under 35 USC 102.” None of the Applicant's previous arguments or arguments presented herein is directed to 35 USC § 102. Applicant has provided convincing evidence that the claimed invention shows and provides surprising and unexpected results over the cited prior art. Neither Whaley nor Yap teach, show, or suggest a film comprising a polyethylene copolymer having the unique combination of a CDBI of at least 70%, a melt index  $I_{2.16}$  of from 0.1 to 15 g/10 min., a density of from 0.910 to 0.940 g/cm<sup>3</sup>, a melt index ratio  $I_{21.6}/I_{2.16}$  of from 30 to 80, and an Mw/Mn ratio of from 2.5 to 5.5; and a low density polyethylene (LDPE) having a melt index  $I_{2.16}$  of from 0.05 to 10 g/10 min and a density of from 0.920 to 0.940 g/cm<sup>3</sup>, as recited in every claim. Further, neither Whaley nor Yap teach, show, or suggest a film having a unique combination of properties to provide shrink films having desirable optical, physical, and mechanical properties. Therefore, the claimed invention is not obvious in view of Whaley and Yap, either alone or in combination. Withdrawal of the rejections and allowance of the claims is respectfully requested. Alternatively, clarification of for the record the Examiner's “102” comment is respectfully requested.

**CONCLUSION**

Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction.

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Respectfully submitted,

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